Results: No statistically significant changes to the PTV dose was noted during treatment (p= 0.8). Dose to the parotid glands (left and right respectively) changed significantly between the 1st and 30th fractions (p=0.02 and 0.01 respectively). Percentage weight loss between RT was significant (P=0.01) between the 1st and 30th fraction, as was the difference in the TS (p=0.02). There was no statistically significant difference in MUAC and MAMC. A negative correlation was found between the changes in weight (3.5%) between pre to mid treatment, with that of increased parotid gland dose. This leads us to hypothesize that a weight loss above 3.5% in the first half of treatment could potentially alert clinicians of likely dose increase in the parotid glands, necessitating adaptive planning strategies.
Conclusions: There is a significant increase in dose to the parotid glands during treatment although the dose to the PTV remains relatively stable. Weight loss and Triceps thickness changes were the two most significant clinical parameters that changed during radiation. A negative correlation existed between early changes of these clinical factors and overall parotid dose changes during radiotherapy. A prospective study with more patients could now be designed to ascertain if a threshold percentage difference in Weight loss and TS changes could predict a significant parotid dose change.

EP-1017
IAEA-HypoX: a randomized multicenter study of accelerated RT and the hypoxic radiosensitizer nimorazole in HNSCC
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Purpose/Objective: Numerous clinical trials have demonstrated that the loco-regional control and disease specific survival in patients with HNSCC can be significantly improved by reducing the total treatment time by the so called 'accelerated fractionation'. Such principle has most recently been demonstrated and confirmed in a large international randomized trial conducted by the IAEA as well as by a recent meta-analysis. The problems of overcoming hypoxia in head and neck cancers have been addressed in numerous clinical trials using different kinds of hypoxic modification and both the experience from major individual controlled clinical trials as well as a meta-analysis has shown that such modification of hypoxia results in significantly better local control, disease-specific and overall survival. Repopulation and hypoxia are independent factors, and it is thus to be expected that the optimal treatment option is a reduced treatment time using concomitant hypoxic modification. Such treatment principle is also applied by some institutions and collaborative groups (such as DAHANCA), but the true value of adding a hypoxic modifier to a treatment schedule with accelerated fractionation has not been evaluated in a controlled clinical trial.
Materials and Methods: A stratified, randomized phase III study of patients with HNSCC randomizes to accelerated radiotherapy ± Nimorazole. Radiotherapy will be given for both arms in 6 fractions/week for a total dose 66-70Gy in 33-35 fractions & Nimorazole is to be administered in doses of approximately 1.2 g/m^2 body surface, 90 minutes prior to the first daily fraction. Quality assurance procedures are applied to ensure consistency and validity of the data. Biological materials are collected from the participating centers for analysis for hypoxia gene expression, as well as HPV/p16 expression.
Results: Patient recruitment started by the first of March 2012. 6 centers out of 9 centers started patient's recruitment. 47 patients are recruited to the trial by the beginning of December 2012. Collection of patient data is done through online electronic forms. Each center is asked to submit the radiotherapy treatment documentations of the first 5 recruited patients. Centers that use IMRT/3DCRT planning techniques are asked to upload the electronic plans of the first 5 recruited patients on a specific FTP site. All plans are reviewed centrally in the trial central department by the quality assurance coordinator. Electronic plans could be viewed using virtual planning software.
Conclusions: The trial is feasible to conduct in the participating centers. And treatment will be given with good quality standards.

EP-1018
Impact of HPV status on the outcome of oropharyngeal cancer treated with advanced radiotherapy techniques.
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Purpose/Objective: Human Papilloma Virus (HPV) status has evolved as one of the most important prognostic factors in head and neck cancer. We analyzed the relative impact of HPV-status and advanced radiotherapy (RT) techniques on outcome.
Materials and Methods: Between Oct 2005 and Dec 2008 74 pts received definitive RT for oropharingeal cancer. In 62 pts we could retrospectively analyze HPV status by p16 immunohistochemistry and molecular analysis for HPV. P16 immunohistochemistry staining was performed using the CINtec® Histology V-Kit for qualitative detection of p16 antigen on tissue section. Both nuclear and/or cytoplasmic p16-staining were considered to be positive. For HPV molecular biology, DNA extraction was performed using a Qiagen Kit. Molecular analysis was performed by nested PCR (AB-Analitica Kit). Mean age was 63 years (35-84) and 84,7% of pts were male. Thirty-five pts (56.5%) presented with stage IV disease (all M0); 17 pts (27.4%) had base of tongue cancer and 34 pts (54.8%) had tonsillar cancer. In 33 pts (53,2%) RT was associated with concomitant chemotherapy with cis-platinum. Seventeen pts (27.4%) underwent 3D simplified RT (3D-S, three field treatment with a single isocenter), followed by a photon/electron beam junction treatment and a 3D-conformal boost with a dose of 50 Gy to elective lymph node areas (CTV1) and 70 Gy to primary tumor and positive lymph nodes (CTV2). Twenty-two pts (35.5%) received 3D advanced RT (3D-A, 5 or 7 field conformal therapy) with doses of 50 Gy to CTV1 and 70 Gy to CTV2. Twenty-three pts (37.1%) underwent intensity modulated RT (IMRT) with simultaneous integrated boost (SIB) with 2 dose levels (54-66 Gy in 30 fractions) or 3 dose levels (54-60-69 Gy in 30 fractions).
Results: Twenty-six pts. were P16+ (43,3%), 27 pts were PCR+ (45%) for HPV 16 and only one for HPV 18. Only 59 pts could be evaluated (two patients were lost to follow up at the time of analysis). Mean over all follow up is 39 months (3-80). OS, DFS and loco-regional control (LRC) at 3 and 5 years were 57,1,%, 51,9% and 79,6% and 50,8%, 45,4%, 77,2% respectively. Univariate analysis based on the Kaplan-Meyer method (SPSS software) resulted in the identification of the following prognostic factors:

Significant prognostic factor for OS	p	Significant prognostic factor for DFS	p
Smoking (cut-off > 10 pack years)	,006	Smoking (cut-off > 10 pack years)	,02
Performance status (IK cut-off 80)	,000	Performance status (IK cut-off 80)	,000
p16-positivity	,000	p16-positivity	,001
PCR-positivity for HPV	,007	PCR-positivity for HPV	,03
Treatment technique	,000	Treatment technique	,02

LRC of P16+ pts was not influenced by treatment technique while in the HPV- cohort the 3 years DFS of pts treated with 3D-S, 3D-A and IMRT were 45,5%, 75% and 78% respectively, though these differences did not reach statistical significance for the relatively small number of patients.
Conclusions: New techniques seem to be more relevant in outcome of p16 negative pts than in p16 positive pts probably because they allow a better high dose coverage of the target which may be more relevant in these prognostically less favourable patients. Further studies must be performed to confirm this hypothesis.

EP-1019
Results of definitive radiotherapy for synchronous carcinoma in head and neck and esophagus.
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